

Remarks

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Thus, claim 1 has been amended to delete the parenthesis around “cold”, overcoming the objection to this claim in item 5 on page 2 of the Office Action.

Claim 1 has been further amended to change the “characterised” language to --which comprises--, more in accord with U.S. practice.

Similarly, the “characterised” language in the dependent claims has been changed to --wherein-- for the same purpose. The article “A” has also been inserted at the beginning of each independent claim, making a further editorial change.

Claim 5 has been amended to depend on claim 4, since the embodiment of claim 5 refers back to the subject matter of claim 4, rather than back to the subject matter of claim 1. Further editorial changes have been made in claim 5.

Similarly, claims 15 and 16 have been amended to depend on claims 13 and 14, respectively, for the same reason.

Claim 17 has been cancelled since it is now a duplicate of amended claim 5.

New claim 21 has been added to the application, and is supported by the disclosure at page 4, line 24 of the specification.

The patentability of the presently claimed invention over the disclosures of the references relied upon by the Examiner in rejecting the claims will be apparent upon consideration of the following remarks.

Thus, the rejection of claims 1-2 and 6 under 35 U.S.C. §103(a) as being unpatentable over US ‘497 in view of Fukuda et al. (US ‘706) is respectfully traversed.

US ‘497 relates, as correctly stated by the Examiner, to a method of producing a fin stock material by continuously strip casting an aluminium fin stock alloy, rolling the as-cast strip to form a sheet article of intermediate gauge, annealing the sheet article and cold rolling to final gauge.

However, this reference does not at all mention “a predetermined solidification rate ensuring material microstructure exhibiting primary particles having average size below 1 micrometer²” as defined in claim 1 of the present application, and which is of utmost importance to avoid increasing pitting corrosion in the vicinity of the Fe-bearing particles and which is

detrimental to the corrosion performance of the alloy. Quite to the contrary, the US '497 reference is concerned with a totally different issue, namely that if the average cooling rate is less than 10°C/sec, the intermediate particles formed during casting **will be too large and cause rolling problems** (column 4, lines 51-53). US '497 nowhere mentions or even suggests that there would be a problem with increased pitting corrosion if the size of the Fe-bearing particles of the cathodic area were increased in the alloy.

Fukuda et al. teach an aluminium alloy clad material as tube material or header material for heat exchangers that exhibits superior strength after brazing and excellent corrosion resistance, and where a sacrificial anode material may be clad onto an aluminium strip possessing a prescribed number of large Si and Fe inter-metallic particles which are present to preferentially corrode and thereby protect the inner layer through galvanic protection.

The present invention is concerned with a totally opposite problem and solution, namely to produce an aluminium alloy sheet material at a predetermined solidification rate to ensure material microstructure exhibiting primary particles having average size below 1 micrometer² to avoid increasing pitting corrosion in the vicinity of the Fe-bearing particles. Thus, with the present invention, the aim is to produce an alloy with small particles and which as such is corrosion resistant, whereas Fukuda et al. are concerned with an aluminium alloy with large particles being designed to corrode and to be clad to another aluminium alloy.

Applicants completely disagree with the Examiner's position that a person skilled in the art would arrive at the present invention by combining US '497 with the teaching of Fukuda et al. Quite to the contrary, with such combination, a skilled person would just arrive at a two-layer clad solution where the non-corrosive layer would possess the properties as described in the US '497 reference, but with smaller intermetallic particles not causing rolling problems, while the corrosive layer would be of the type described in Fukuda et al.

Furthermore, attention is directed to new claim 21, which recites that the continuous strip casting is at a predetermined solidification rate in the range from 10² to 10³ °C/sec. There is no suggestion of this predetermined solidification rate ensuring material microstructure exhibiting primary particles having average size below 1 micrometer², in either US '497 or Fukuda et al.

For these reasons, Applicants take the position that the presently claimed invention is clearly patentable over these references, even if combined with each other.

The rejection of claims 3 and 12 under 35 U.S.C. §103(a) as being unpatentable over US '497 in view Fukuda et al., in further view of US '006, as well as the rejection of claims 4 and 5 under 35 U.S.C. §103(a) as being unpatentable over US '497 in view Fukuda et al., in further view of Zeigler et al. (US '917) and ASM Handbook, and the rejection of claims 13-20 under 35 U.S.C. §103(a) as being unpatentable over US '497 in view of Fukuda et al., in further view of US '006, Zeigler et al. and ASM Handbook, are respectfully traversed.

All of these rejections are directed at dependent claims, all of which are directly or indirectly dependent on claim 1, the only independent claim under consideration. The Examiner applies the US '006, Zeigler et al. and ASM Handbook references only for the features of dependent claims 3, 4, 5 and 12-20. But since claim 1 is patentable over US '497 in view of Fukuda et al. for the reasons discussed above, it is apparent that even if the other references were combined with US '497 and Fukuda et al. in the manner suggested by the Examiner, the resultant combination would still not suggest the subject matter of claim 1, and therefore, the claims which are directly or indirectly dependent on claim 1 are also patentable.

In view of the foregoing amendments and remarks, it is submitted that each of the grounds of objection and rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

Respectfully submitted,

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